Life Cycle Part & Component Knowledge Sharing Portal

Industry Day

8 May 2007

Background

- Recommendations
  - Create a Life Cycle Part & Component Knowledge Sharing Portal
  - Develop Improved Parts Management Tools and Metrics

Related Recommendations

- **Make Parts Management a Policy and Contractual Requirement**
- **Revitalize Parts Management within the Systems Engineering Discipline**

Issues

- **Parts management is difficult**
  - Data exists in numerous, diverse information systems
  - Many systems cannot communicate or exchange data
  - Some systems are old and difficult to use
  - Systems contain data that are duplicative, incomplete, or inaccurate
- **Parts management is costly**
  - Part and component selection
  - Part and component cataloging / documentation
  - Part and component logistics support / footprint management
  - DMSMS

LCPC KSP Objectives

- **Improve parts management throughout DoD**
  - Eliminate duplication
  - Improve data accuracy
  - Reduce errors
  - Decrease costs
  - Enable effective data system management
- **Promote and support increased standardization**
  - Lower life-cycle costs, shorter customer wait times, and fewer DMSMS events
  - Increased quality, reliability, and efficiency.
- **Promote data sharing and parts-related research**
  - Enable easy and effective conversion to a common data exchange standard
- **Permit greater integration of parts data resources between government and industry**
  - Promote and facilitate increased win-win voluntary data sharing
- **Provide a single point of entry for parts management data and tools**
  - Promote and facilitate creation of a shared parts management community and network

Approach

- Develop LCPC KSP quickly through spiral development approach
  - Establish shared Government/Industry portal development team
  - Create a virtual infrastructure to support PM community & network
  - Integrate and leverage DMSMS knowledge sharing portal
  - Identify a viable government/industry parts data exchange standard
  - Start developing a standard-based part selection query capability
- Evolve portal through customer-driven requirements
  - Identify Government/Industry governing body to lead & own project
- Employ COTS technologies to the maximum degree
  - Leverage and support existing parts-related marketplace
  - Integrate existing products, services & tools to benefit entire community

Community Ownership & Governance

- Initial portal concept and prototype developed through Government/Industry collaboration (PMRIPT & PSMC)
- Transition to "*Part Management Improvement Consortium*" (notional name)
- Owned by the members, governed by a Board of Directors, and supported by a small staff
- Self-funded through low membership dues (Not-for-profit - cover operating cost only)

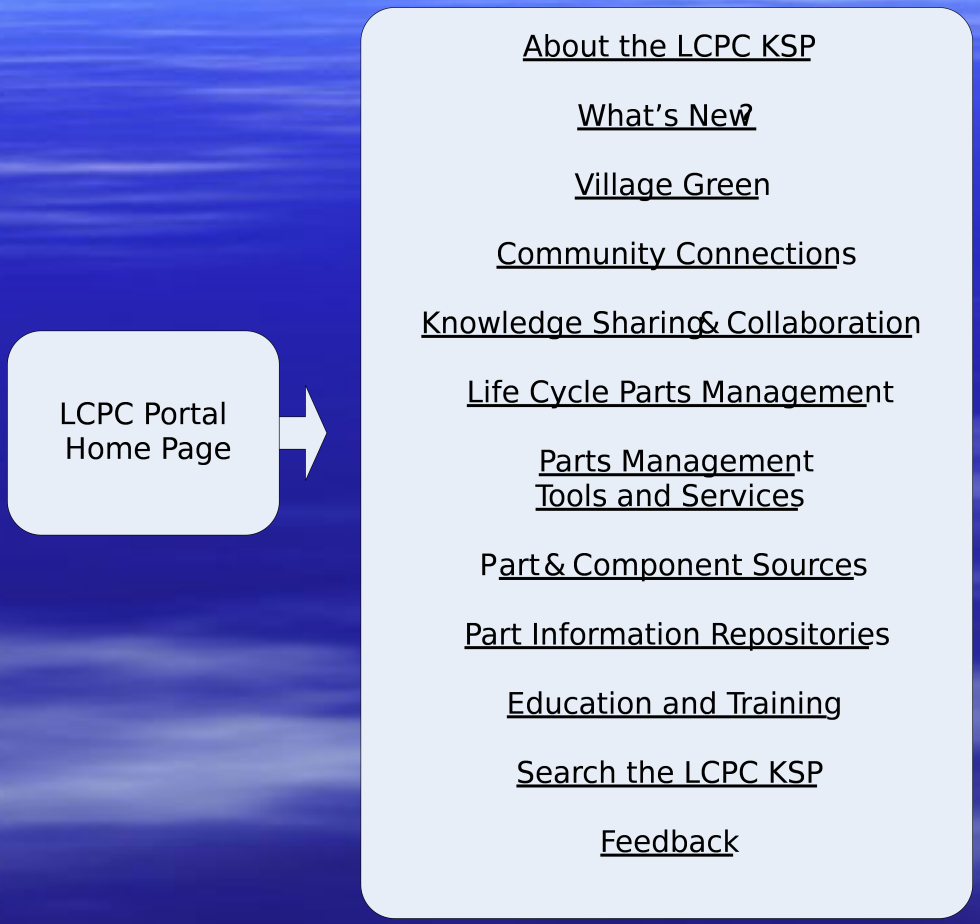
Benefits to the Members

- Lower costs
- More efficient & effective parts management
- Improved communication and collaboration
- Access to valuable tools and resources
- Resources to improve data quality
- Resources to enable low cost data conversion to community standard
- Access to unique portal presence for every community member company

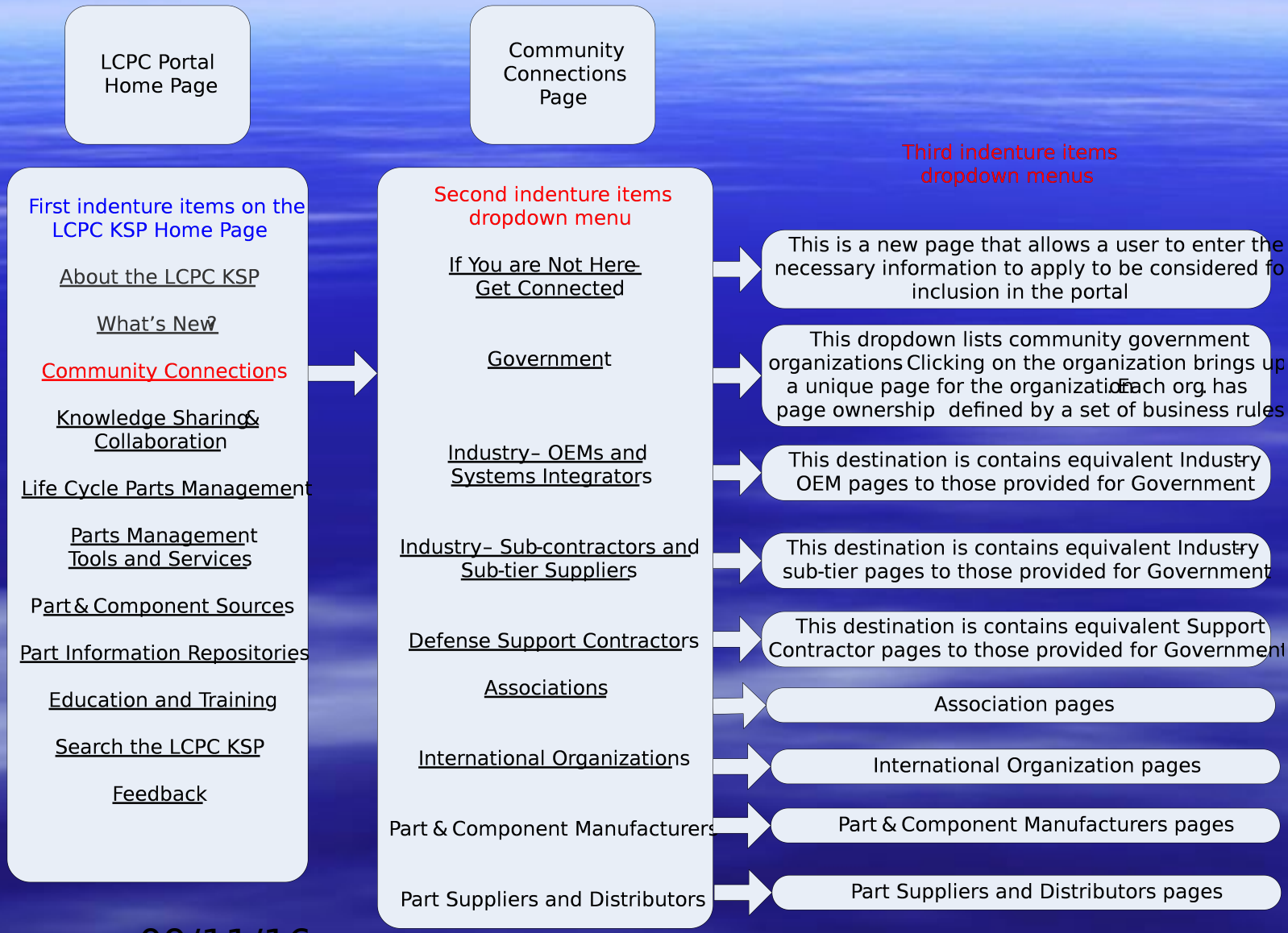
Spiral #1: Initial Portal Presence

- Launch LCPC KSP home page
- Engage and involve stakeholder community
- Enable access to and use of wide range of existing resources (DMSMS, GIDEP, PMT, ASSIST, WSIT, E-Mall, SDW, DSCC resources, FLIS, etc.)
- Provide connectivity to all parts-related sites (within parts management network hub)
- Promote portal growth and community ownership
- Initiate transition to community governance structure

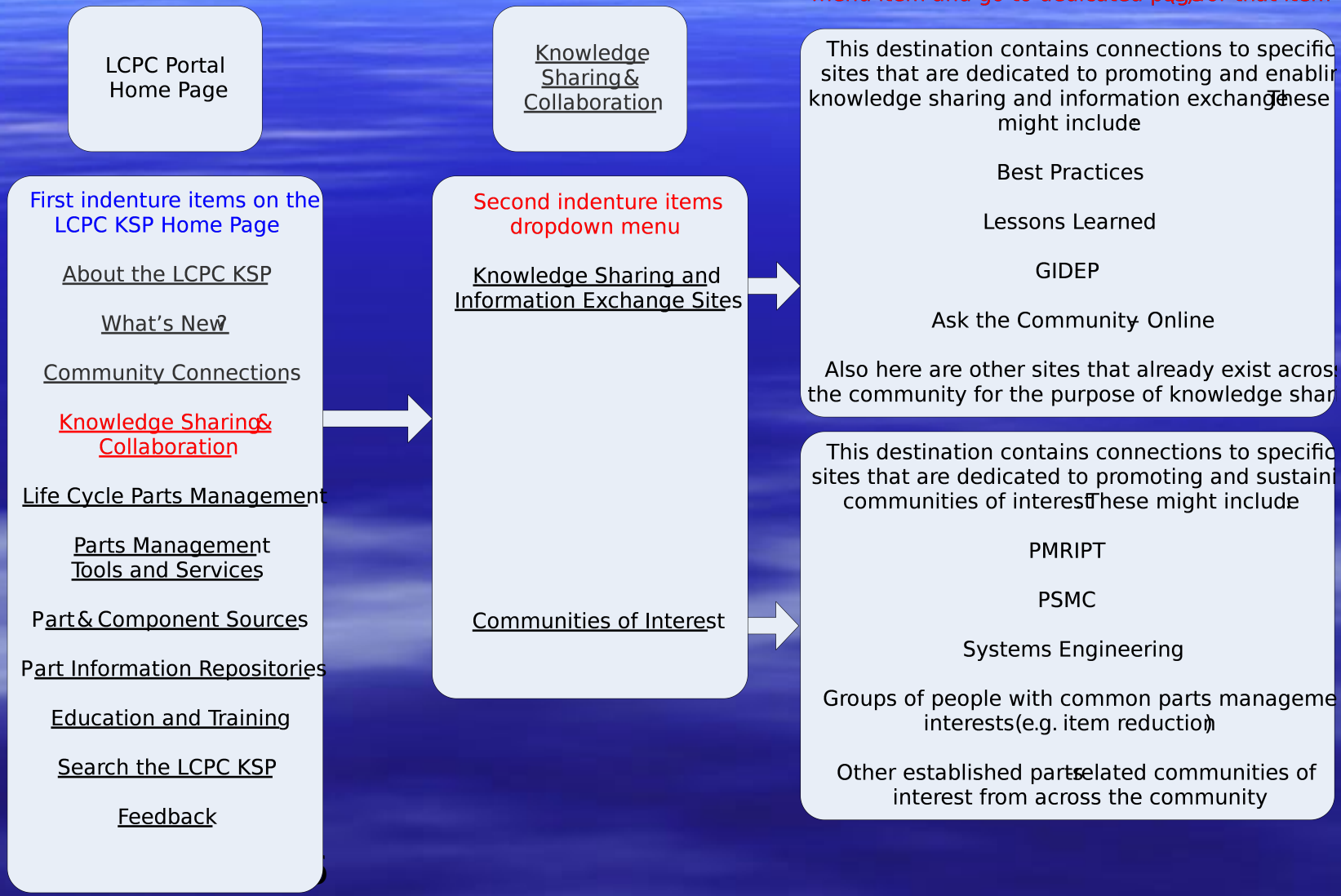
First Tier Functionality



Community Connections


LCPC Portal Home Page
Community Connections Page
First indenture items on the LCPC KSP Home Page
About the LCPC KSP
What's New?
Community Connections
Knowledge Sharing & Collaboration
Life Cycle Parts Management
Parts Management Tools and Services
Part & Component Sources
Part Information Repositories
Education and Training
Search the LCPC KSP
Feedback
Second indenture items dropdown menu
If You are Not Here - Get Connected
Government
Industry – OEMs and Systems Integrators
Industry – Sub-contractors and Sub-tier Suppliers
Defense Support Contractors
Associations
International Organizations
Part & Component Manufacturers
Part Suppliers and Distributors
Third indenture items dropdown menus
This is a new page that allows a user to enter the necessary information to apply to be considered for inclusion in the portal
This dropdown lists community government organizations. Clicking on the organization brings up a unique page for the organization. Each org. has page ownership defined by a set of business rules
This destination is contains equivalent Industry OEM pages to those provided for Government
This destination is contains equivalent Industry sub-tier pages to those provided for Government
This destination is contains equivalent Support Contractor pages to those provided for Government
Association pages
International Organization pages
Part & Component Manufacturers pages
Part Suppliers and Distributors pages

Knowledge Sharing and Collaboration


LCPC Portal Home Page
Knowledge Sharing & Collaboration
Third indenture item dropdown menu. Click on a menu item and go to dedicated page(s) for that item
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Second indenture items dropdown menu
Knowledge Sharing and Information Exchange Sites
Communities of Interest
This destination contains connections to specific sites that are dedicated to promoting and enabli knowledge sharing and information exchange. These might include:
Best Practices
Lessons Learned
GIDEP
Ask the Community – Online
Also here are other sites that already exist across the community for the purpose of knowledge shar
This destination contains connections to specific sites that are dedicated to promoting and sustaini communities of interest. These might include:
PMRIPT
PSMC
Systems Engineering
Groups of people with common parts manageme interests (e.g. item reduction)
Other established parts-related communities of interest from across the community

Life Cycle Parts Management

LCPC Portal Home Page

Life Cycle Parts Management

Third indenture item dropdown menu. Click on a menu item and go to dedicated page(s) for that item

First indenture items on the LCPC KSP Home Page

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Second indenture items

Concept

Technology Development

Systems Development and Demonstration

Production and Deployment

Operations and Support

This destination contains connections to information and sites that are specific to parts management within the given program phase. These might include people and disciplines such as:

Program Managers and Program Teams
Acquisition and Contracting
Systems Engineering
Design Engineering
Quality Management
Parts Managers
Manufacturing

Also included are activities or events:
Milestone Reviews
Parts Management Planning
System Test and Evaluation
Selecting Parts

In addition are destinations and resources that are relevant to people working in the phase
Preferred parts
Qualified Parts

Any other topic that is relevant to the phase and somehow connected to parts management might be included such as:
Training Opportunities
Standardization Best Practices

Each phase of the product life cycle has parts related considerations and activities. To the extent we can identify what these are and provide value added information for members of the community we should include them in the portal design

Parts Management Tools and Services

LCPC Portal Home Page

First indenture items on the LCPC KSP Home Page

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Education and Training

Search the LCPC KSP

Feedback

Parts Management Tools and Services

Second indenture items dropdown menu

If Your Tool or Service is Not Here – How to Get Listed

Part Location and Selection Tools and Services

Part-Related Management and Analytical Tools and Services

Part Information Resources
Public or No Cost
License or Fee Required

Search Engines

Third indenture item dropdown menu. Click on a menu item and go to dedicated page for that item

This destination contains connections to sites that are contain or make available part-related tools and services and also to part-related information resources that may be accessed or used by any of the listed tools. These might include tools such as:

LCPC KSP Part Selection Support Tool
Program Managers Tool (PMT)
Power Sources Coherent View (PSCV)
Generic Compound Analysis Tool (GCAT)
Weapon System Impact Tool (WSIT)
Item Reduction Web Site Capability (IRWSC)
Aging Systems Coherent View (ASCV)
Deductive Spreadsheet System (DSS)

Part-related information resources may be listed here and might be divided into:

Public or No Cost Resources such as:
DSCC Standard Microcircuit Lookup Table
DoD E-Mall

License or Fee Required Resources such as:
Haystack
Part Miner

Also included are part-related services such as:
Part Design Services
Part Location Services
Part Testing Services
Part Disposal Services (HAZMAT)

In addition, search engines are provided such as:
Google
Yahoo
Ask

Other useful information or connections may be listed here if the Tools and Services section provides the best fit for their placement within the portal.

Part & Component Sources

LCPC Portal Home Page

Part & Component Sources

Third indenture items dropdown menus

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Second indenture items dropdown menu

If You Are Not Here– How to Become Listed

Part & Component Manufactures

Suppliers & Distributors

Recyclers & Secondary Market

Qualified & Certified Sources (QPL, QML, QSL, Space Qualified RADHARD

Buying or Purchasing Services

These destinations contains connections to sites from which parts may be directly purchased or obtained such as

Part & Component Manufactures
Intel
Motorola

Suppliers & Distributors
Electronic Parts Distributor
Parts Warehouse

Recyclers & Secondary Market
Rochester Electronics

Qualified & Certified Sources (QPL, QML, QSL, Space Qualified RADHARD,

Buying or Purchasing Services

Other useful information or connections may be listed here if the Part & Component Sources section provides the best fit for their placement within the portal

Part-related Information Repositories

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Feedback

Part-related Information Repositories

Second indenture items dropdown menu

If You Are Not Here– How to Become Listed

Libraries

Information Repositories and Databases

Individual Publications Papers, Books, Magazines Articles

Community Reading Room

Third indenture items dropdown menus

These destinations contains connections to sites that contain part and component related information such as:

Libraries
DSPO
DSCC
DAU
NIST

Essential Information Repositories and Databases
ASSIST
Shared Data Warehouse

Individual Publications Online
(Papers, Books, Magazines, Articles and Publications)
Better Serving the Warfighter

Publication Locator Tools
Look Smart/Find Articles

Community Reading Room
(Recommended Reading from Within the Community)

Other useful information or connections may be listed here if the Part Information Repository section provides the best fit for their placement within the portal

Education and Training

LCPC Portal Home Page

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Education and Training

Search the LCPC KSP

Feedback

Education and Training

Second indenture items dropdown menu

If Not Listed Here - How to Become Listed

Online Education and Training

Schools and Universities

Certifications and Qualifications

Conferences, Symposia, & Traveling Road Shows

Community Calendar

Third indenture items dropdown menus

These destinations contains information and connection to sites that address part-related education and training such as:

Online Education and Training
(Relevant educational opportunities available online)

Schools and Universities
(School and University web links and relevant classroom courses and curriculum)

Certifications and Qualifications
(Information about relevant certifications and qualifications and connections to sites where one can learn more or where they can be obtained)

Conferences, Symposia, & Traveling Road Shows
(Information about and connections to sites addressing relevant upcoming or traveling educational opportunities)

Community Calendar
(Relevant upcoming educational opportunities offered by and posted from within the community e.g. Industry Day (also mirrored in What's New?))

Other useful information or connections may be listed here if the Education and Training section provides the best fit for their placement within the portal

Spiral #1: Membership Growth

1. PMRIPT & PSMC
2. DoD Parts Community
3. OEMs & System Integrators
4. Major Part Suppliers and Services
5. Government Departments and Agencies
6. Broader Parts Community

Spiral #2: Standard for Parts Data Exchange

- Approve, Initiate, and Demonstrate Part Data Exchange Standard
- Employ Part Selection Query Interface Tool to Demonstrate Application of Standard
- Translate, Map, and Build Standard-based Query Interface for Eight Selected Part Types
  - Microcircuits
  - Fasteners
  - Motors
  - Pumps
  - Valves
  - Batteries
  - O-Rings
  - Capacitors

Spiral #2: Part Selection

- **Part selection user interface**
  - **User interface screens**
    - **Eight initial part types**
    - **Evolve to include all relevant part types**
- **Part selection and query logic**
  - **Standard code for communicating part parametric data (ISO-22745, ISO-8000)**
  - **Interface with part data sources and services**
- **Strategy and Rules for integrating Government and Industry**
  - **Parts data sharing**
  - **Preferred parts & priority ordering of query results**
  - **Protection of proprietary data**
- **Planning and preparation for Spiral #3 capability demonstration**

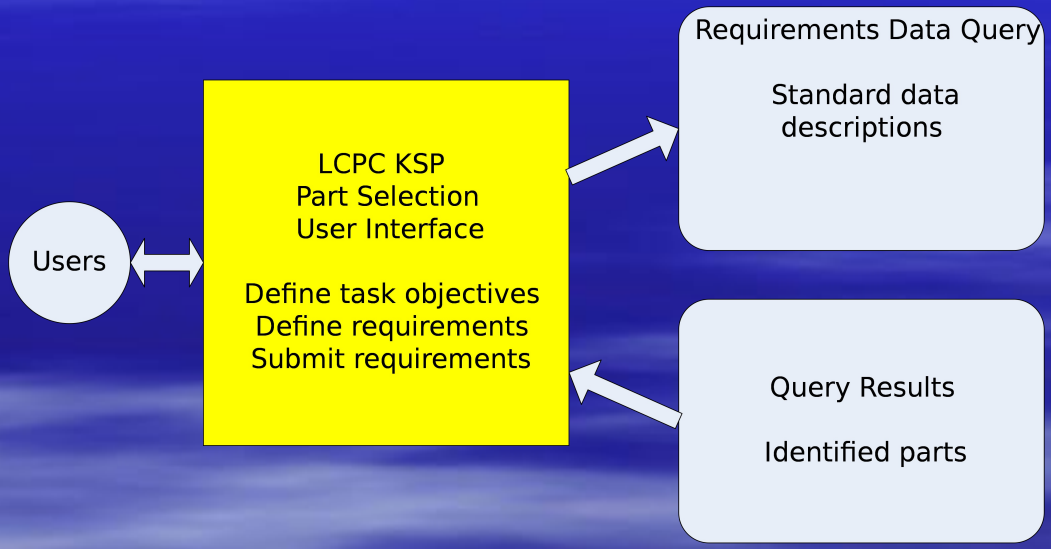
Prototype Part Selection Tool

Accessible through:

- **Site Map**
  - **Part Selection Tool**
- **Tools and Services**
  - **Part Selection Tool**
- **Life Cycle Parts Management**
  - **Design and Development**
    - **Design Engineering**
      - **Part Selection Tool**

Part Selection
Requirements Definition

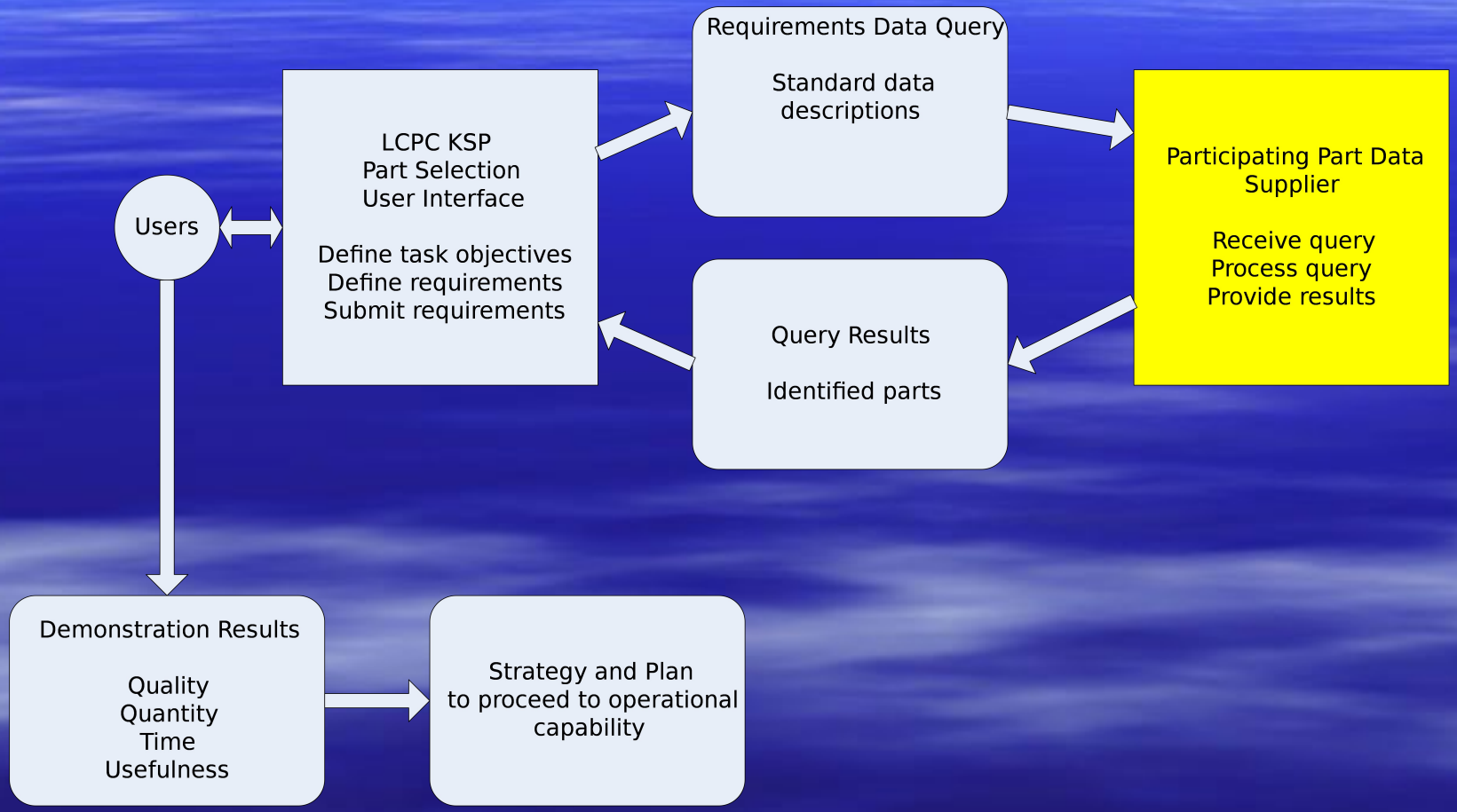
- *Part Selection Requirements Definition Screen Shot (microcircuit)*



Spiral #3: Capability Demonstration

- **Plan and organize demonstration process and protocols**
- **Invite 3rd party participation - part location service providers**
- **Conduct capability demonstration**
  - **Ability to receive query in standard (XML) format (ISO-22745, ISO-8000)**
  - **Ability to match query to available parts**
  - **Ability to return useful query results**
- **Evaluate demonstration results**
  - **Evaluation Team - Government and Industry Engineers (part selectors)**
  - **Standard query templates**
  - **Score results**
  - **Identify gaps**
- **Develop requirements / strategies for initial operating capability**
  - **Assure fair process and level playing field**
  - **Protect DoD, Industry, and participant interests**
  - **Negotiate service provider revenue model strategies and capabilities**
  - **Avoid legal issues**

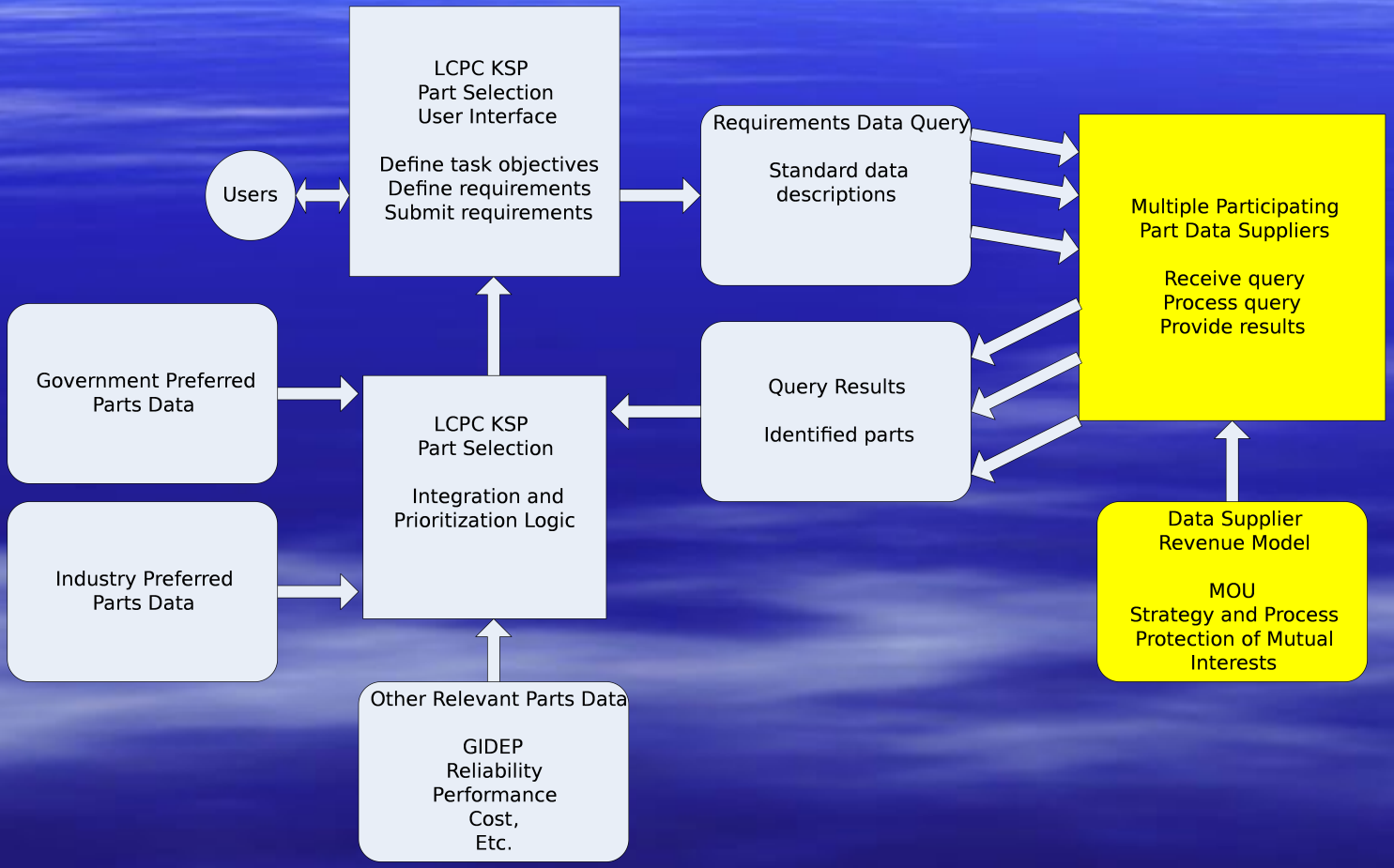
Capability Demonstration Concept



Spiral #4

- **Achieve initial operating capability for part selection capability**
  - **Negotiate business strategy and MOU with participating data suppliers**
  - **Develop capability to integrate part query results from multiple sources and to sort query results using Government and Industry standardization and preference models**
  - **Establish mechanisms to assure long term viability (funding) and continuous improvement of LCPC**

Part Selection Operational Model



Query by Part Number

Query: Part Number

Microcircuit	Part Characteristics – Parametric Data									Source	Availability	Cost
Part Number	**#**	**$**	**@**	**&**	**%**	**$**	**^**	**++**	**=**	**Company**	**Quantity**	**Each**
1234-5678												

Query Results

Microcircuit	Part Characteristics – Parametric Data									Source	Availability	Cost
Part Number	**#**	**$**	**@**	**&**	**%**	**$**	**^**	**++**	**=**	**Company**	**Quantity**	**Each**
1234-5678	a	b	c	d	e	f	g	h	k	XYZ, Inc.	500	$10
1234-5678	a	b	c	d	e	f	g	h	k	ABC, Inc.	50	$20
1234-5678	a	b	c	d	e	f	r		k	DEF, Inc.	2	$10
1234-5678	a	p	c	q	e	f	g	h		GHI, Inc.	40	$15
1234-5678		b			n	f	g	m	k	KLO, Inc.	200	$80

Query by Part Characteristics

Query: Part Characteristics

Microcircuit	Part Characteristics – Parametric Data									Source	Availability	Cost
Part Number	#	$	@	&	%	$	^	++	=	Company	Quantity	Each
	a	b	c	d	e	f	g	h	k			

Query Results

Microcircuit	Part Characteristics – Parametric Data									Source	Availability	Cost
Part Number	#	$	@	&	%	$	^	++	=	Company	Quantity	Each
1234-5678	a	b	c	d	e	f	g	h	k	XYZ, Inc.	500	$10
1234-5678	a	b	c	d	e	f	g	h	k	ABC, Inc.	50	$20
1234-5679	a	b	c	d	e	f	r		k	DEF, Inc.	2	$10
ABC-5678	a	p	c	q	e	f	g	h		GHI, Inc.	40	$15
8765-4321		b			n	f	g	m	k	KLO, Inc.	200	$80

Query Results – Priority Sort

Query: Part Characteristics

Microcircuit	Part Characteristics – Parametric Data									Source	Availability	Cost
Part Number	#	$	@	&	%	$	^	++	=	Company	Quantity	Each
	a	b	c	d	e	f	g	h	k			

Query Results ↓ Priority Sort Order

Microcircuit	Part Characteristics – Parametric Data									Source	Availability	Cost
Part Number	#	$	@	&	%	$	^	++	=	Company	Quantity	Each
	Perfect Match – Company + DoD Preferred Part											
	Perfect Match – Company Preferred Part											
	Perfect Match – DoD Preferred Part											
	Almost a Perfect Match – Preferred Part											
	Perfect Match – Not a Preferred Part											
	Almost a Perfect Match – Not a Preferred Part – Meets Key Requirements											
	Perfect Match – Not a Preferred Part – Performance Flag											
	Not a Perfect Match – Not a Preferred Part – Performance Flag											

Spirals #5 -- n

- Develop & integrate new capabilities
  - Parts Management Plan Builder
  - Item Reduction
  - Supply Chain Visibility
  - Performance Measurement
- Continuous Improvement

LCPC KSP
Live Demonstration

Questions?